

KRISHNKANT SAHU

PhD || Journal Bearing Design | Tribology

Mechanical and Industrial Engineering | IIT Roorkee, Uttarakhand, India

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RESEARCH AREAS

My research areas span the diverse domains of Mechatronics, Machine Design, Tribology, Surface Topography, Finite Element Method, Non-Newtonian and Smart Lubricants, Kinematics, Robotics, and Fluid Film Journal Bearings. Through exploration in these fields, I aim to contribute to the advancement of mechanical engineering, focusing on intelligent systems, efficient machinery design, lubrication technologies, and motion analysis in both theoretical and practical applications.

EDUCATION

Year	Degree/ Examination	Specialization	Institution/Board	CGPA/Percentage /Grade
21 Nov. 2021	Ph.D.	Machine Design/Tribology	Indian Institute of Technology Roorkee (Uttarakhand) India	A
2014	M.Tech.	Industrial Design	Maulana Azad National Institute of Technology Bhopal (Madhya Pradesh) India	9.27
2010	B.E.	Mechanical	Guru Ghasidas Central University Bilaspur (Chhattisgarh)	7.64
2006	Twelfth	PCM	Chhattisgarh Board of Secondary Education	86.4 %
2003	Tenth	All Subjects	Chhattisgarh Board of Secondary Education	69.5 %

ADMINISTRATIVE EXPERIENCE:

Dean Training and Placement | Sharad Institute of Technology College of Engineering, Ichalkaranji (Kolhapur) India |

Oct 19, 2023 – Till Date

B.Tech. Project Coordinator | Mechatronics Engineering, Sharad Institute of Technology College of Engineering,
Ichalkaranji (Kolhapur) India |

Jan 01, 2023 – Till Date

TEACHING/RESEARCH EXPERIENCE

Assistant Professor | Sharad Institute of Technology College of Engineering, Yadrav | <https://www.sitcoe.ac.in/> |

Mechatronics Engineering Department

Oct 06, 2022 – Till Date

Courses taught: - B.Tech.: Sensor and instrumentation, Robot kinematics and dynamics, fluid mechanics and machinery

Assistant Professor | Jagran Lakecity University Bhopal | <https://jlu.edu.in/> |

July 01, 2016 - Dec 22, 2016

Mechanical Engineering Department

Courses taught: - Strength of Materials, Theory of Machines

Assistant Professor | CDGI Indore | <https://cdgi.edu.in/cdgi.php> |

July 10, 2014 - June 30, 2016

Mechanical Engineering department

Courses taught: - Machine Design, Theory of Machines, Fluid Mechanics

RESEARCH/INDUSTRIAL EXPERIENCE

Project Scientist | Institute of Wood Science and Technology (IWST) || [Institute of Wood Science & Technology \(icfre.gov.in\)](http://www.icfre.gov.in)

| Institute formerly known as IPIRTI, Bangalore

Oct 04, 2021 – Oct 03, 2022

Post Held: Project Scientist

Project code: SP/122/WOOD/TESTING/IKEA/AN/2017

Project Title: Evaluation of coir composites as an alternative to existing panel products for its various end-use applications

Sponsored by: M/s Coir Board, Central Institute of Coir Technology, Govt. of India

Job Responsibilities: Planning and conducting experiments, recording and analyzing data, evaluating data, reviews, and summaries

AWARDS/SCHOLARSHIPS/ACHIEVEMENTS

- MHRD Scholarship during **Ph.D.** (IIT, ROORKEE)
- MHRD Scholarship during **M. Tech** (MANIT, Bhopal)
- Qualified **GATE Exam** in the years 2012, 2013, and 2014
- **Outstanding Reviewer Award 2022** for Surface Topography: Metrology and Properties (IOP Publishing)

TRAINING

Summer Training | Indian Railways

May 12, 2008 - June 26, 2008

- BCN Depot and Coaching complex
- 45 days' summer training in SECR (Indian Railways), Bilaspur, Chhattisgarh

PROJECTS

Title: *A Study on the Performance of Slot-entry Hybrid Journal Bearings* | Ph.D.

2016-2021

| [Indian Institute of Technology Roorkee \(iitr.ac.in\)](http://www.iitr.ac.in) |

This project deals with the numerical simulation of Slot-entry hybrid journal bearings used in supporting enormous structures, including high-speed spindles. The influence of the non-linear behavior of smart lubricants (Magnetorheological, electrorheological, ferrofluid, and Magneto hydrodynamic) is numerically investigated on the performance of these bearings. Additionally, the use of surface texturing in the form of micro grooves and surface irregularities has been investigated to improve the efficiency of the bearing.

Title: *Dry Sliding Wear Behavior of Aluminum/Al₂O₃ Nano Composites* | M.Tech.

2013-2014

| [Maulana Azad National Institute of Technology, Government of India \(manit.ac.in\)](http://www.manit.ac.in) |

This project explores Aluminum/Al₂O₃ Nanocomposites for enhanced tribological and mechanical properties in automotive and aerospace applications. Al alloy Al₂O₃ composites were prepared with varied Al₂O₃ nanoparticle weight percentages using ultrasonic-assisted stir casting. Tribological behavior, mechanical properties, and heat treatment were analyzed using a "Pin on Disc" wear testing machine. The results indicate improved properties in Al/Al₂O₃ Nanocomposites.

Title: *Evaluation of entries received during public challenges* | RDSO, Lucknow |

2017-2018

| [WELCOME TO RDSO \(indianrailways.gov.in\)](http://www.indianrailways.gov.in) Research | Designs and Standards Organization (RDSO) Lucknow

Sponsored by the Research Designs and Standards Organization (RDSO) Lucknow at IIT Roorkee, this consultancy project focuses on evaluating public submissions aimed at enhancing specific aspects of Indian Railways. These areas include increasing passenger capacity and improving accessibility from low-level platforms, aligning with the Ministry of Indian Railways directives. Supervised by Prof. Satish C. Sharma, IIT Roorkee, I served as a member of the evaluator team during the initial stage of project evaluation.

Title: *Evaluation of coir composites as an alternative to existing panel products for its various end-use applications*

| [Institute of Wood Science & Technology \(icfre.gov.in\)](http://www.icfre.gov.in) | [Institute of Wood Science and Technology \(IWST\)](http://www.iwst.ac.in), formerly known as the IPIRTI, Bangalore | Merger Date 22nd Nov. 2022. Oct 2021- Oct 2022

Ministry of Environment, Forests, and Climate Change, Government of India

Various industries assessed Medium Density Coir Board (MDCB), Coir Veneered Board (CVB), and Coir Face Blockboard (CFBB) for physical and mechanical properties, following Indian standards. Mechanical tests and physical evaluations were conducted, including modulus of rupture, modulus of elasticity, internal bond, screw/nail withdrawal, glue shear strength, moisture content, density, water absorption, swelling, dimensional changes, squareness, edge straightness, and resistance to flame spread. Constructive suggestions were provided to industries for improving product quality, resulting in observed enhancements. The study also highlighted the potential applications of coir-based composites as alternatives to traditional wood-based panel products.

REVIEWER OF INTERNATIONAL JOURNALS

([link](#)) [Krishnkant Sahu](#) | [Publons](#)

- Tribology International
- Tribology letters
- Industrial lubrication and tribology
- Surface Topography: Metrology and Properties
- Materials Research Express
- Journal of Engineering
- Journal of Physics D: Applied Physics.
- Journal of Low-Frequency Noise, Vibration & Active Control
- Physica Scripta
- I MechE Part J: Journal of Engineering Tribology

Web of Science Researcher ID

Web of Science Researcher ID: AEO-5878-2022

([link site](#)) [Krishnkant Sahu - Web of Science Core Collection](#)

ORCID

<https://orcid.org/0000-0002-8745-9337>

Scopus Author ID

[Scopus Author ID: 56964785200](#)

Research Publications

[Krishnkant Sahu - Google Scholar](#)

LinkedIn Profile URL

<https://www.linkedin.com/in/dr-krishnkant-sahu-a81594ab>

ATTENDED OF NATIONAL/INTERNATIONAL COURSES/FDPS/WORKSHOPS

- **FDP on Fundamental and Advanced Skills for Futuristic Vehicles** Organized by **Indian Institute of Technology Hyderabad**, July 01-05, 2023
- **International Course on Fundamentals of Bogie Design** Organized by **Centre for Railway Research Govt. of India, IIT Roorkee** Oct 12-16, 2020
- **International Course on Railway Vehicle Dynamics** Organized by **Centre for Railway Research Govt. of India, IIT Roorkee** May 27-29, 2019
- **11th Summer school in Tribology at Indian Oil Institute of Petroleum and Management** organized by **Tribology Society of India**, May 14-18, 2019
- **Engineering Faculty Workshop** Organized at **CDGI Indore India**, January 12-14, 2016.
- **Workshop on Improving Awareness about Plagiarism** Organized by **IIT Roorkee**, October 31, 2018
- **Workshop on Preparing Young Researchers** Organized by **MANIT Bhopal India**, March 03-04, 2014
- **Workshop on Recent Advancement in Product Innovations and Design** Organized by **MANIT Bhopal India**, February 17-21, 2014
- **Startups in Engineering: Recent Trends** Organized by **Institute Industry Interaction Cell**, August 27, 2016

ORGANIZED CONFERENCES/ WORKSHOPS

- **13th International Advanced Computing Conference** on 15th & 16th Dec 2023 at **Sharad Institute of Technology, College of Engineering, Kolhapur, Maharashtra.**

SKILLS

Computer languages	MATLAB
Software Packages	AutoCAD, Solidworks, MATLAB, Microsoft Office
Languages Known	Hindi (SRW), English (SRW)

RESEARCH PUBLICATIONS (**Krishnkant Sahu - Google Scholar**)

SCI Journals-09

Q1	Q2	Q3
2	6	1

Scopus-02,

International Conference-06

List of Publications in SCI Journals

- 1) **Krishnkant Sahu** and Satish C. Sharma, Adesh Kumar Tomar. " Effect of bearing shell deformation and ER fluid behavior on two-lobed slot-entry hybrid journal bearing." *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* Volume: issue: page (s). (November 2023) (<https://doi.org/10.1177/13506501231213774>) (SAGE Publishing) (Q2, IF- 2.0)
- 2) Adesh Kumar Tomar, Satish C. Sharma, and **Krishnkant Sahu**, Performance Analysis Textured Spherical Hybrid Journal Bearings operated with Magnetorheological Fluid, *ASME-Journal of Tribology*, J. Tribol. Jan 2024, 146(1): 014602 (13 pages) (Q2, IF- 2.5) (ISSN 0742-4787) <https://doi.org/10.1115/1.4063495>
- 3) **Krishnkant Sahu**, Satish C. Sharma, and Adesh Kumar Tomar, Analysis of MR Fluid Lubricated Slot Entry Hybrid Conical Journal Bearing with Texturing Arrangements, *Tribology International*, Volume 188, 15 July 2023, 108788, ISSN 0301-679X. (Elsevier) (<https://doi.org/10.1016/j.triboint.2023.108788>) (Q1, IF- 6. 2) (ISSN 0301679X)
- 4) **Krishnkant Sahu**, Satish C. Sharma and Nathi Ram "Misalignment and Surface Irregularities Effect in MR Fluid Journal Bearing" *International Journal of Mechanical Sciences*, Volume 221, 1 May 2022, 107196, ISSN 0020-7403. (Elsevier) (<https://doi.org/10.1016/j.ijmecsci.2022.107196>) (Q1, IF- 7.3)
- 5) Satish C. Sharma and **Krishnkant Sahu** "On the behavior of a ferrofluid-lubricated herringbone-grooved hybrid slot-entry bearing" *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, Volume: 235 issue: 11, page(s): 2295-2315 (November 1, 2021) (<https://doi.org/10.1177/1350650121997241>) (SAGE Publishing) (1.674) ISSN 1350-6501 (Q2, IF- 2.0)
- 6) **Krishnkant Sahu** and Satish C. Sharma. "Influence of bearing surface irregularities on hybrid slot-entry journal bearing with electrically conducting lubricant." *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* Volume: 234 issue: 8, page(s): 1185-1207. (December 2019) (doi.org/10.1177/1350650119896195) December 27, 2019 (SAGE Publishing) (Q2, IF- 2.0)

- 7) **Krishnkant Sahu** and Satish C. Sharma. "Magneto-rheological fluid slot-entry journal bearing considering thermal effects." *Journal of Intelligent Material Systems and Structures* Volume 30, Issue no. 18-19 (September 22, 2019): 2831-2852. (doi.org/10.1177/1045389X19873401) November 1, 2019 (SAGE Publishing) ISSN: 1530-8138 (Q2, IF- 2.774)
- 8) **Krishnkant Sahu** and Satish C. Sharma. "A simulation study on the behavior of magnetorheological fluid on Herringbone-grooved hybrid slot-entry bearing". *Tribology Transactions*, Volume 62(6), pp.1099-1118 (2019). (doi.org/10.1080/10402004.2019.1649775) 29 Aug 2019 (Taylor & Francis) (1.96) ISSN: 1040 2004 (Q2, IF- 2.1)
- 9) **Krishnkant Sahu** and Satish C. Sharma. "A study on performance of slot entry hybrid journal bearing considering effect of surface irregularities." *Industrial Lubrication and Tribology* Volume 70, no. 6 (3 August 2018): 1094-1109. (doi.org/10.1108/ILT-09-2017-0264) 13 August 2018 (Emerald Publishing) ISSN 0036-8792 (Q3, IF- 1.7)

List of Publications Conferences indexed in Scopus

- 1) **Krishnkant Sahu**, R. S. Rana, Rajesh Purohit, Dinesh K. Koli, Saurabh Singh Rajpurohit, and Mayuresh Singh. "Wear Behavior and Micro-Structural Study of Al/Al₂O₃Nano-composites Before and After Heat Treatment." *Materials Today: Proceedings* 2, no. 4-5 (2015): 1892-1900. (<https://doi.org/10.1016/j.matpr.2015.07.143>) (Elsevier Publications) (2 September 2015) ISSN 22147853
- 2) Mayuresh Singh, Rana, R. S., Rajesh Purohit, and **Krishnkant Sahu**. "Development and analysis of al-matrix nanocomposites fabricated by the ultrasonic-assisted squeeze casting process." *Materials Today: Proceedings* 2, no. 4-5 (2015): 3697-3703. (2 September 2015) (<https://doi.org/10.1016/j.matpr.2015.07.146>) (Elsevier Publications) ISSN 22147853

List of Publications in International Journals/International Conference

- 1) **Krishnkant Sahu**, and Satish C. Sharma, "Performance analysis of geometrically imperfect slot entry hybrid journal bearing", 9th International Conference on Industrial Tribology (ICIT-2017), December 6-9, 2017 Kolkata India
- 2) **Krishnkant Sahu** and Satish C. Sharma, "A study on grooved slot entry journal bearing", *International Conference on Industrial Tribology (ICIT-2019)*, December 1-4, 2019, IISc Bangalore, India.
- 3) **Krishnkant Sahu** and Satish C. Sharma, "Influence of ER Lubricant Behavior on 2-Lobe geometrically Imperfect Slot Entry Hybrid Journal Bearing", TRIBOINDIA2021 – An International Virtual Tribology Conference, 02-04 December 2021, Department of Mechanical Engineering, Saintgits College of Engineering (Autonomous), Kottayam, Kerala – 686532, India
- 4) **Krishnkant Sahu** and Satish C. Sharma, "Influence of textured shapes in Magnetohydrodynamic slot entry Journal Bearings", *TRIBOINDIA conference SRM Institute of Science and Technology (INDIATRIB 2020)*, December 10-12, 2020, Chennai, Tamil Nadu.
- 5) **Krishnkant Sahu**, R.S. Rana, Rajesh Purohit "A study of dry sliding wear behavior of Al6061-Al₂O₃ Nano Composites, *Journal of Advanced Engineering Research*, ISSN: 2393-8447, Volume 2, Issue 1, 2015, pp.11-16
- 6) **Krishnkant Sahu**, Rajesh Purohit, R.S. Rana, (2014), "Advances in Hydroforming Processes" PP 510-519, 1st International Conference on Mechanical Engineering: Emerging Trends for Sustainability (ICMEETS) MANIT, Bhopal.

Book Chapter Publications

Adesh Kumar Tomar and **Krishnkant Sahu**, (Eds.). (2023). Edition 1st Edition First Published 2023, Imprint CRC Press, Pages 17, eBook ISBN 9781003363576 (<https://doi.org/10.1201/9781003363576>)
<https://www.taylorfrancis.com/chapters/edit/10.1201/9781003363576-13/case-study-adesh-kumar-tomar-krishnkant-sahu> .

REFERENCES

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 Mechanical Engineering,
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Declaration:

I hereby declare that the above-mentioned information is correct to the best of my knowledge.



Date: February 08, 2023

KRISHNKANT SAHU